NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
WASHINGTON, D.C. 20546

OFFICE OF THE ADMINISTRATOR

APR 14 1971

Honorable Henry A. Kissinger
Assistant to the President
for National Security Affairs
The White House
Washington, D. C. 20500

Dear Dr. Kissinger:

The Skylab experimental manned space station will be launched in 1973. One of its many objectives will be to investigate the use of manned systems in earth resources surveys from space. An Earth Resources Experiment Package (EREP) will be flown in Skylab for this purpose. It is described in the attached "Announcement of Flight Opportunities" which solicited proposals from the earth resources science and management communities for experimental uses of the data to be acquired.

In addition to the EREP family of photographic, infrared and microwave sensors, we have the opportunity to include an Apollo terrain camera. It is already developed, is unclassified, and has been used for lunar photography already released to the public.

This camera, an 18-inch focal length Hycon, would provide earth photography (single frames within the field of view of the EREP instruments) at a higher resolution than NASA has yet demonstrated. The best photographs of high contrast scenes are expected to have ground resolution no better than 30-feet; the majority, however, are expected to be of low-contrast scenes and therefore in the 60-foot class.

The objectives of the terrain camera are these:

1. The camera will be used specifically to support the earth resources investigations of the Department of Interior in geology, cartography, and hydrology.

2. We wish to use the camera for high-resolution sampling within the field of view of the EREP sensors in order to assist us in interpreting the EREP data.

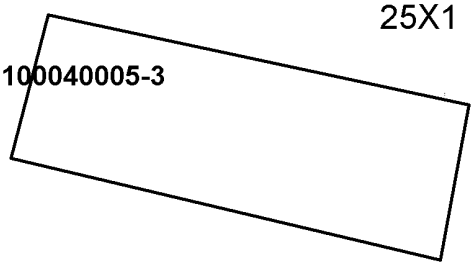
3. The camera will permit us to develop an understanding of the relative importance of spatial resolution and spectral resolution in earth resources investigations.

Current plans for the use of the cameras are to emphasize the US, the Western Hemisphere, and the contiguous oceans; final decisions on the test sites and geographic areas to be covered will await our evaluation of the many experiment proposals for use of Skylab earth survey data and the final time-lining of the overall Skylab program. It should be noted here that, during the 8-month period when Skylab will be active, less than half of that time will be manned; and, during the manned periods, we expect to devote a total of only some 70 hours to earth observations.

The proposed earth terrain camera is brought to your attention because its potential ground resolution capability exceeds the guidelines set out in 1966 by the NSAM 156 Committee that NASA earth photography should be limited for a period to ground resolutions no better than some 60-feet.

The guidelines did recognize the need for a progressive easing of this resolution level. It does seem that the guidelines have been overtaken in good part by time and events. No technological security questions appear to be involved. Moreover, international sensitivity toward space imagery at useful resolutions significantly grosser than those required for intelligence purposes seems to us virtually to have disappeared. For example, the Soviet Union recently proposed and agreed to a joint experimental program with us in this field and will join some 50 foreign nations and international organizations next month at our International Workshop on Earth Resources Surveys in Ann Arbor.

We would like to have your 40 Committee's views on the question of including the earth terrain camera in the Skylab program; we have to date made no unclassified commitments to its incorporation in the



mission, but would like, for schedule and management reasons, to do so within the next several weeks. We would therefore much appreciate an early response.

Sincerely,

for George M. Low
Acting Administrator

Enclosure

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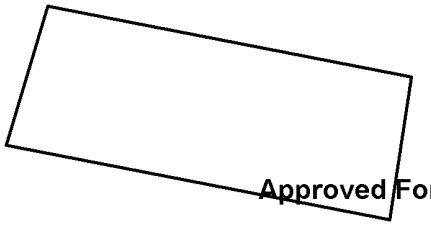

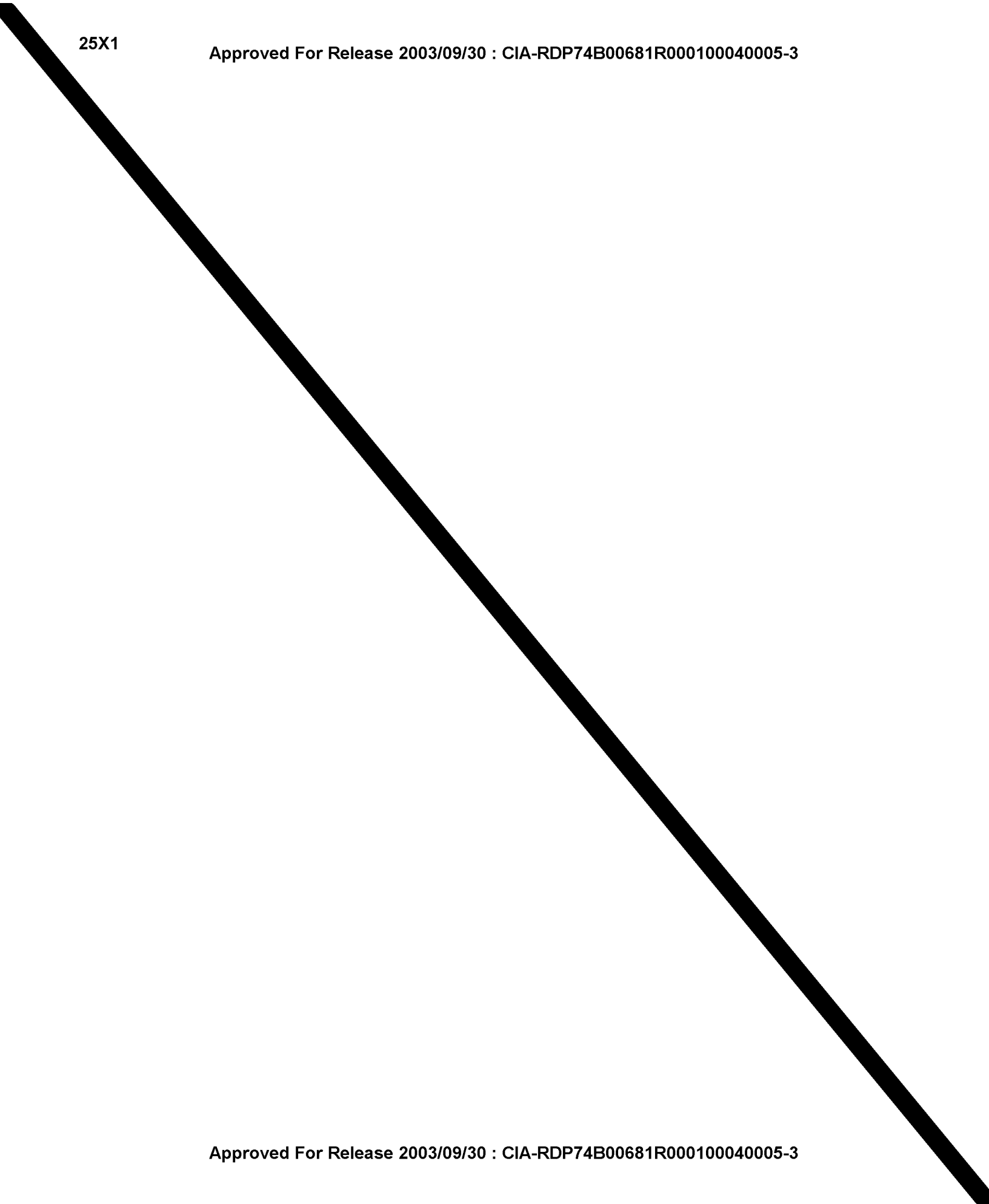

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